Lesson 9:
Electronic Cigarettes (Vapes): A deeper dive

Earlier in the lessons, you learned about electronic cigarettes, also known as vapes. This lesson features a more in-depth look at the epidemic facing teens today. Since 2016, youth e-cigarette use has skyrocketed in large part because of marketing by the tobacco industry.

Learning Objectives

After this lesson, students will be able to:

1. Talk about the basics of e-cigarettes/vapes;
2. Learn the facts and health impacts of nicotine and other chemicals in e-liquid and;
3. Discuss the influences on youth, including peer perspectives and targeted marketing by the tobacco industry.

Materials Needed:

- Whiteboard and whiteboard markers (Use a chalkboard or large white sticky note paper if a whiteboard is not available.)
- Access to the Internet for video and Kahoot
- Presentation slides
- Scrap paper for Exit Ticket
- Optional: markers and paper for Tobacco Industry Targeted Marketing supplemental activity

Overview of Lesson

- Warm up Activity and Introduction: **5 minutes**
- What's in an E-cigarette Discussion: **10 minutes**
- Nicotine Harms Discussion: **10 Minutes**
- Why Do Teens Vape Discussion: **10 minutes**
- Tobacco Industry Targeted Marketing: **10 minutes**
- Kahoot Activity: **10 minutes**
- Exit Ticket: **5 minutes**

Before the Lesson

- Prepare the whiteboard or large sticky note paper for the Warm-up Activity.
- Cue up the "Dr. Rose Marie Leslie" video in presentation slides
- Prepare the presentation slides

Warm Up Activity and Introduction

Total Time: 5 minutes

- Ask for a volunteer notetaker to write responses under each of the words in **bold** below. Ask the group to call out what these words mean to them, going through each word one by one. Note: Refer to combustible cigarettes as “regular” cigarettes for this discussion.

- On the whiteboard/large piece of paper, write **“Vapes.”** Ask the group what words come to mind when they think about Vapes. If needed, ask prompting questions, such as "Who’s using them?", "Where do you see them?", "What do you see on social media about vapes?", "Where can you buy them?", or "What do you know about flavored vapes?".

- On the whiteboard/large piece of paper, write **“E-cigarettes.”** Ask the group what words come to mind when they think about E-cigarettes. Ask prompting questions if needed.

- On the whiteboard/large piece of paper, write **“Cigarettes.”** Ask the group what words come to mind when they think about cigarettes. Ask prompting questions if needed.

- Ask the students what are the similarities and differences between the products? Make sure the students make the connection that vapes and e-cigarettes are the same product, that all three products are tobacco products, and that e-cigarettes are not “quit smoking” tools.

Notes

What's in an e-cigarette? Activity

Total Time: 10 minutes

Prepare slides 2-10 for the *What's in an e-cigarette?* activity. Ask the questions as you move through the slides. See below and notes in slides for discussion prompts.

Introduction

E-cigarette aerosol contains thousands of unknown chemicals and more than 60 known chemicals. Almost 30 of those chemicals are on the FDA's list of harmful and potentially harmful substances and several are carcinogenic or cancer-causing. Typically, e-liquid consists of nicotine, glycerin, propylene glycol and flavorings. However, when the liquid is heated, other chemicals are formed. To learn more about flavored tobacco, see Lesson 4.

Ingredient Names

Show the group the list of ingredients included in e-cigarettes on page six, along with the harmful ones highlighted. Ask the students what stands out to them about the various ingredients.

Discussion Prompts

1. What is an aerosol? (*Answer: An aerosol is a suspension of fine solid particles or liquid droplets in air or another gas)*
2. When heated and vaped, propylene glycol changes. Why do you think that happens? Who knows what happens when a liquid is heated? (*Answer: Heated liquid turns to gas. Propylene glycol turns into formaldehyde*)

Environmental Impacts of Commercial Tobacco

E-cigarettes are harmful to the environment because they contain three forms of waste in one: plastic waste, hazardous waste, and electronic waste (e-waste). Their manufacturing processes also contribute to deforestation and the emission of greenhouse gasses. We will discuss this more in Lesson 10 "Environmental Impacts".

E-Cigarette Ingredients

Propylene glycol
Glycerin
Flavorings
Nicotine
NNN
NNK
NAB
NAT
Ethylbenzene
Benzene
AcetaldeXylene
Toluene
hyde
Formaldehyde
Naphthalene
Styrene
Benzo(b)fluoranthene
Chlorobenzene
Crotonaldehyde
Propionaldehyde
Benzaldehyde
Valeric acid
Hexanal

Fluorine
Anthracene
Pyrene
Acenaphthylene
Acenapthene
Fluoranthene
Benz(a)anthracene
Chrysene
Retene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Benzo(ghi)perylene
Acetone
Acrolein
Silver
Nickel
Tin
Sodium
Strontium
Barium
Aluminum
Chromium
Boron

Copper
Selenium
Arsenic
Nitrosamines,
Polycyclic aromatic hydrocarbons
Cadmium
Silicon
Lithium
Lead
Magnesium
Manganese
Potassium
Titanium
Zinc
Zirconium
Calcium
Iron
Sulfur
Vanadium
Cobalt
Rubidium

NOTE: Compounds in **blue** are from the FDA's Potentially Harmful Substances-Established List (2012)

All of these chemicals have been found in e-cigarette aerosol. Many of these are the same chemicals found in regular cigarettes. The takeaway is that e-cigarettes produce an aerosol that often contains glycerin, flavorings, nicotine and many other harmful chemicals and toxins, some of which are known to cause cancer.

Nicotine Harms

Total Time: 10 minutes

Prepare slides 11-16 on *Nicotine Harms.* Ask questions as you move through the slides and inform students about My Life, My Quit™ at the end of the discussion.

Introduction

Nicotine's negative health effects extend to all systems of the body including the brain, cardiovascular (heart, blood vessels, and blood), respiratory (breathing), renal (kidneys), and reproductive systems. Because their brains are still developing, adolescents can become addicted to nicotine more easily than adults. Some e-cigarettes contain as much nicotine as 300 cigarettes.

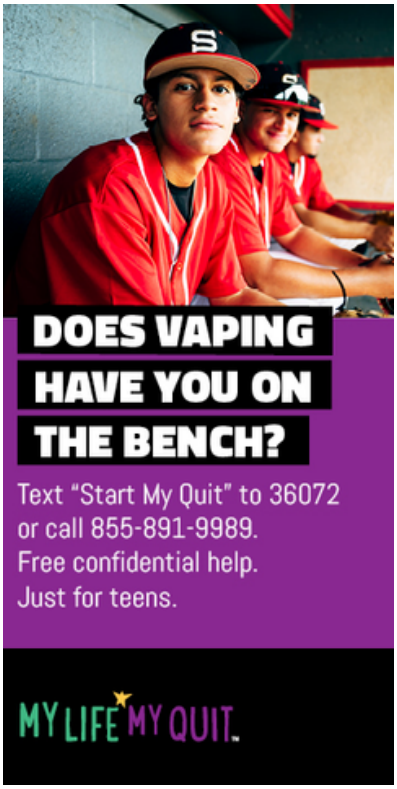
Discussion Prompts

1. Has anyone ever heard the term "nic sick"? Raise your hand if you have heard about it.
2. Why do you think young people are afraid to ask for help when they are sick from vaping?
3. How old are you when your brain is fully developed? (*Answer: 25*)
4. What part of the brain is the decision-making center? (*Answer: Pre-Frontal Cortex*)
5. What is the impact of nicotine on the brain? (*Answer: No amount of nicotine is safe. Nicotine can interfere with brain development and can have long-term effects on cognitive development (thinking) and mental health.*)
6. What does addictive mean? (*Answer: That means that once you use it, your body will continue to want more.)*
7. Do you know of any resources available to help someone quit?

My Life, My Quit™

My Life, My Quit™ is the free and confidential way to quit smoking or vaping. Teens can text "Start My Quit" to 36072 or click to chat with a Coach.

More information is available at **mn.mylifemyquit.org**.



Why Do Teens Vape? Discussion

Total Time: 10 minutes

- Prepare slides 17-23 for the *Why Do Teens Vape?* segment, beginning with the one asking why teens vape. See below and notes in slides for discussion prompts.
- It's okay to acknowledge that it's not only normal for teens to take risks, but it is an essential part of adolescent development. The goal of the conversation is to discuss healthy ways to check out new and exciting experiences (i.e., healthy social opportunities to try new things vs. more dangerous risky behavior).
- **Option 1:** Have students shout out thoughts, write on a white board, turn and talk, or go around the room to answer the questions below or,
- **Option 2:** Break students into groups of 3-6 students per group for discussion. Have each group choose a reporter to report back on what their group discussed.
- Acknowledge the helpful stress relievers they share that release natural dopamine (ex. sleep, exercise, deep breathing) and explain how dopamine can improve mood, reduce stress, and help with focus and concentration.

Discussion Prompts

1. What stresses you out?
2. What are healthy ways to cope with stress?
3. How do YOU cope with stress?
4. Why do you think your friends might vape?
5. Friends have a big influence on us. What are ways to handle peer pressure?

Tobacco Industry Targeted Marketing

Total Time: 10 minutes

Prepare slides 24-27 for the *Tobacco Industry Targeted Marketing* segment, beginning with the slide with the Juul and Newport ads. Ask the group if they have noticed any marketing aimed at them, and if so, what.

Supplemental Activity

If students are interested in continuing the conversation after presenting the slides on Tobacco Industry Targeted Marketing, prepare this supplemental activity. Discuss with students specific tactics they noticed the tobacco industry uses in its targeted marketing. Hand out a piece of paper and markers for each student to create a social media post. Using the tobacco industry's tactics, have students create a message preventing their peers from vaping and instead turning to healthy ways to cope with stress. Allow 5-10 minutes for students to create their ad. After everyone is done, go around and have each student share and discuss the ad they created and what tactics they used.

Discussion Prompts

1. What specific tactics did you notice the tobacco industry used to target specific audiences?
2. How can we use its tactics to prevent individuals from vaping and promote healthy ways to cope with stress?
3. What tactics did you use in your social media ad?

Kahoot Activity

Total Time:
10 minutes

Prepare a Kahoot for students by creating questions based on the information presented in this lesson plan. Sample questions can be found on the next page. If time allows, have students create their own questions based on the information provided, compile the questions they created, and conduct the activity as a group.

To create a Kahoot:

1. Login or create an account on kahoot.com.
2. Start typing your first quiz question and add 2-4 answer alternatives.
3. On the right-hand side, adjust the timer and choose how many points to award for a correct answer.
4. Click "Add Question" to create 5-8 questions and add images or videos to make the question more engaging.
5. Once the Kahoot is ready, click "Start" on the left-hand side and choose between classic mode (individual) or team mode. Share your screen with the group to have students visit the website and use the game PIN provided.

Note: If creating a Kahoot is not feasible or students do not have access to a device to play a Kahoot, read out the questions and have them write their answers on a piece of paper. After the final question, go through and have students tally up the number of correct answers.

Kahoot Sample Questions

Please use the sample questions below as a guide. The bolded options are the correct answers to the questions.

1. Inhaling formaldehyde gas is associated with:
    a. **Increased risk of certain types of cancer.**
    b. **Irritation to the nose, eyes, skin and throat.**
    c. Nothing, It's perfectly safe to inhale.
    d. An unexplained urge to dissect a frog.
2. No amount of nicotine in vapes or other tobacco products is safe for teens because:
    a. Their bodies are smaller than adults.
    b. **Their brains are still developing and nicotine can have long-term effects.**
    c. **Nicotine is highly addictive.**
3. "Nic Sick" (nicotine poisoning) symptoms include:
    a. **Nausea**
    b. **Dizziness**
    c. **Headache**
    d. Cravings for cotton candy.
4. Vaping does not help to reduce stress.
    a. **True**
    b. False
5. Some disposable vapes have really high levels of nicotine that can exceed
    a. The equivalent nicotine of 10 cigarettes.
    b. **The equivalent nicotine of 300 cigarettes.**
    c. Most disposable vapes do not contain any nicotine.

Exit Ticket

Total Time: 5 minutes

Project the following questions on the board so the students can refer to them as they reflect. Ask them to write down their answers.

1. What do you think is the most dangerous effect of nicotine?
2. What would you say to a friend who vapes or is considering starting to vape?
3. What do you think vaping will look like in 10 years?

Notes

Notes

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